Supporting Information

Copolyesters of ε-caprolactone and L-lactide catalyzed by tetrabutylammonium phthalimide-N-oxyl organocatalyst

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Materials and Methods

FT-IR spectra was recorded on a BRUKER VERTEX-70 FT-IR spectrophotometer, scanning in the spectral range of 400-4000 cm^{-1} with the scanning resolution of 4.0 cm^{-1}. Thermogravimetric analysis (TGA) was performed using a TA Q500 TGA instrument under a nitrogen atmosphere. The sample was heated from 30 to 600 °C at a heating rate of 10 °C/min.

Copolymerization of L-LA and ε-CL for 2 min

The copolymerization was conducted in a glovebox. Magnetic heating plate was preheated to the desired temperature. Equivalent amount of L-lactide and ε-caprolactone, **TBAPINO.**, ^{t}BuONa and a magnetic stirrer were added to 10 mL Schlenk tube. After reaction for 2 min, the benzoic acid was used to quench the reaction. Then the dichloromethane was used to dissolve the crude product, and the copolymer was precipitated by dropping into excess fast-stirring ethanol. The solid residue was centrifuged and dried at vacuum at 50 °C for 12 h and a white solid copolymer was obtained.

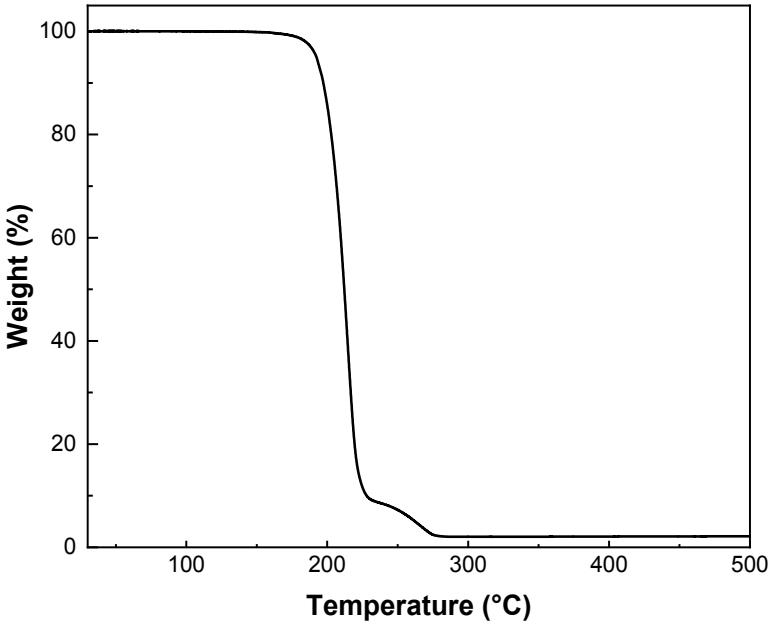

Fig. S1 TGA curve of **TBAPINO**

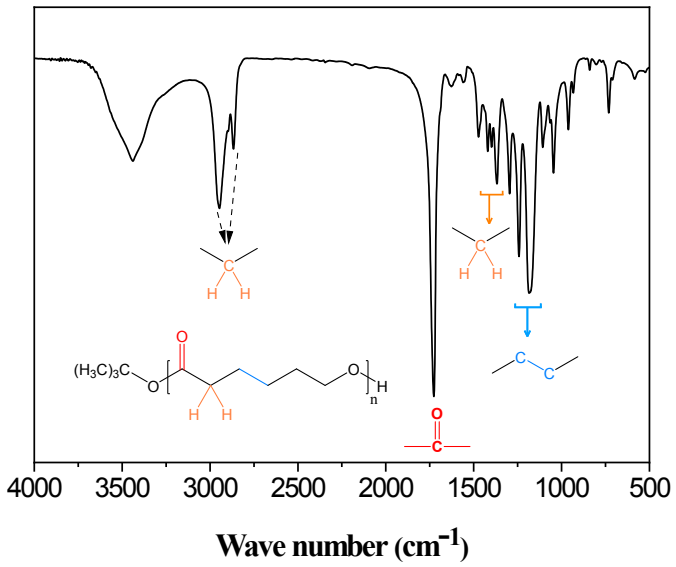

Fig. S2 IR spectrum of PCL (**Table 4**, entry 10)

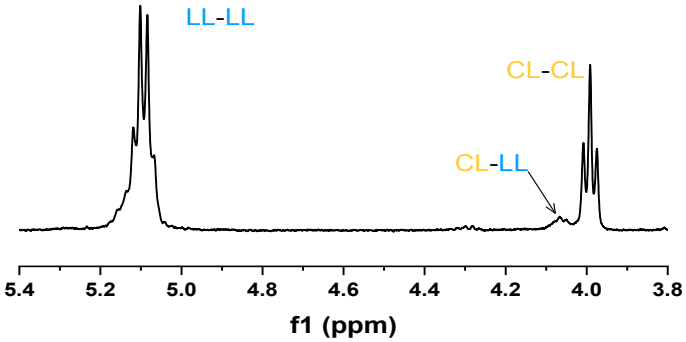

Fig. S3 ^{1}H NMR of PCLA (Polymerization condition: 120 °C, [CL]:[**TBAPINO**]:[^{t}BuONa]=200:10:1, [CL]:[LA]=1:1, LA and CL were charged together, quenched after reaction for 2 min); LL and CL referred to the lactidyl and caproyl units respectively